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Bakers mix and bake ingredients according to recipes to produce breads, pastries, and other baked goods. Retail Bakers are employed in grocery stores and specialty shops and produce small quantities of breads, pastries, and other baked goods for consumption on premises or for sale as specialty baked goods. In manufacturing, bakers produce goods in large quantities, using high-volume mixing machines, ovens, and other equipment. Goods produced in large quantities usually are available for sale through distributors, grocery stores, or manufacturer's outlets.

The most modern commercial bakeries have adopted a system of 'continuous mixing,' which allows for the continuous production of pre-baked products with virtually no human involvement in the baking process. This has resulted in a single machine performing all the steps of dough preparation in a continuous operation.

Food Batchmakers set up and operate equipment that mixes or blends ingredients used in the manufacturing of a wide variety of food products. Some work in candy factories or in cheese and ice cream plants. Many are employed in commercial bakeries making bread, cookie, doughnut, and tortilla doughs, as well as cake batters. Others operate machines that mix and blend spices or seasonings, peanut butter, mayonnaise, or mustards. In addition to food products, these workers are also found in the tobacco and beverage industry.

Tasks*Bread and Pastry Bakers*

- ▶ Weigh and measure ingredients, using measuring cups and spoons.
- ▶ Mix ingredients to form dough or batter by hand or using electric mixer.
- ▶ Roll and shape dough, using rolling pin, and cut dough in uniform portions with knife, divider, or cookie cutter.
- ▶ Mold dough in desired shapes, place dough in greased or floured pans, and trim overlapping edges with knife.
- ▶ Mix and cook pie fillings, pour fillings into pie shells, and top filling with meringue or cream.
- ▶ Check production schedule to determine variety and quantity of goods to bake.
- ▶ Spread or sprinkle toppings on loaves or specialties and place dough in oven, using long-handled paddle (peel).

Bakers and Food Batchmakers

- ▶ Cover filling with top crust; place pies in oven; and adjust drafts or thermostatic controls to regulate oven temperatures.
- ▶ Mix ingredients to make icings, decorate cakes and pastries, and blend colors for icings, shaped ornaments, and statuary.
- ▶ Cut, peel, and prepare fruit for pie fillings.

Manufacturing Bakers

- ▶ Measure flour and other ingredients to prepare batters, dough, fillings, and icings, using scale and graduated containers.
- ▶ Place dough in pans, molds, or on sheets, and bake dough in oven or on grill.
- ▶ Dump ingredients into mixing-machine bowl or steam kettle to mix or cook ingredients according to specific instructions.
- ▶ Decorate cakes.
- ▶ Apply glaze, icing, or other topping to baked goods, using spatula or brush.
- ▶ Roll, cut, and shape dough to form sweet rolls, pie crusts, tarts, cookies, and related products prior to baking.
- ▶ Observe color of products being baked and adjust oven temperature.
- ▶ Develop new recipes for cakes and icings.

Food Batchmakers

- ▶ Set up, operate, and tend equipment that cooks, mixes, blends, or processes ingredients in the manufacturing of food products, according to formulas or recipes.
- ▶ Record production and test data for each food product batch, such as the ingredients used, temperature, test results, and time cycle.
- ▶ Observe gauges and thermometers to determine if the mixing chamber temperature is within specified limits, and turn valves to control the temperature.
- ▶ Clean and sterilize vats and factory processing areas.
- ▶ Observe and listen to equipment in order to detect possible malfunctions, such as leaks or plugging, and report malfunctions or undesirable tastes to supervisors.
- ▶ Mix or blend ingredients, according to recipes, using a paddle or an agitator, or by controlling vats that heat and mix ingredients.
- ▶ Follow recipes to produce food products of specified flavor, texture, clarity, bouquet, and/or color.
- ▶ Select and measure or weigh ingredients, using English or metric measures and balance scales.
- ▶ Turn valve controls to start equipment and to adjust operation in order to maintain product quality.

Detailed descriptions of these occupations may be found in the Occupational Information Network (O*NET) at online.onetcenter.org.

Bakers and Food Batchmakers

Important Skills, Knowledge, and Abilities

- ▶ Operation and Control — Controlling operations of equipment or systems.
- ▶ Reading Comprehension — Understanding written sentences and paragraphs in work-related documents.
- ▶ Mathematics — Using mathematics to solve problems.
- ▶ Active Listening — Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
- ▶ Operations Monitoring — Watching gauges, dials, or other indicators to make sure a machine is working properly.
- ▶ Production and processing — Knowledge of raw materials, production processes, quality control, costs, and other techniques for maximizing the effective manufacture and distribution of goods.
- ▶ Information Ordering — The ability to arrange things or actions in a certain order or pattern according to a specific rule or set of rules (e.g., patterns of numbers, letters, words, pictures, mathematical operations).
- ▶ Visual Color Discrimination — The ability to match or detect differences between colors, including shades of color and brightness.

Work Environment

Bakeries are kept spotlessly clean, and personal cleanliness is very important. Work areas can be uncomfortably hot and noisy. Employers who require uniforms or aprons also furnish and launder them. Oven mitts are also supplied to employees when necessary. Bakery production jobs are usually performed at a fast, steady pace while standing. Many plant jobs involve strenuous physical work, including heavy lifting, despite the use of machinery. Work hours typically begin early in the day, sometimes around 4 a.m.. Large firms have around-the-clock production. Most Bakers and Food Batchmakers work a standard 40-hour week.

Many large bakeries and some small shops have contracts with the Bakery, Confectionery, and Tobacco Workers' International Union of America, AFL-CIO.

California's Job Outlook and Wages

The California Outlook and Wage table below represents the occupations across all industries.

Standard Occupational Classification	Estimated Number of Workers 2004	Estimated Number of Workers 2014	Average Annual Openings	2006 Wage Range (per hour)
Bakers				
51-3011	21,000	24,600	850	\$8.72 to \$14.71
Food Batchmakers				
51-3092	11,200	12,300	390	\$8.36 to \$14.18

Wages do not reflect self-employment.

Average annual openings include new jobs plus net replacements.

Source: www.labormarketinfo.edd.ca.gov, Employment Projections by Occupation and OES Employment & Wages by Occupation, Labor Market Information Division, Employment Development Department.

Bakers and Food Batchmakers

Trends

The number of Bakers is expected to grow at an average rate compared with all occupations in California through 2014; in addition, an estimated 4,900 replacement workers needed assures a continued need for these workers. The need for Food Batchmakers will be slower than average for all occupations. There will be an estimated 2,800 workers needed during 2004-2014 to replace those leaving for other types of work or retirement.

Baking is one of the nation's most stable industries with employment little affected by seasonal variations. New and improved labor-saving technologies and mechanization in processing food products may curb some job growth, but to what extent is not known.

Training/Requirements/Apprenticeships

Bakers often start as apprentices or trainees. Apprentice Bakers usually start in smaller craft bakeries, while in-store bakeries, such as those in supermarkets, often use the title, "Trainee." Apprenticeship programs currently last three years. Certificate or other formal training programs are typically less than one year.

Applicants should be at least 18 years old and have the ability to read and write. They must pass a basic arithmetic test since math skills are needed to modify baking formulas. Good health is essential. A physical examination is required, as well as a health certificate indicating freedom from communicable diseases.

Postsecondary schools and community colleges in California offer certificate programs in Baking and Pastry Arts. Correspondent courses, such as those offered by the American Institute of Baking or the Retail Bakers Association, are gaining in popularity.

Food Batchmakers typically train on the job in most food processing plants. Those who work with dairy products may attend specialized training. Workers are required to be in good health and free from communicable diseases.

Recommended High School Course Work

High school students interested in this kind of work should take home economics, if offered, general science or chemistry, and mathematics.

Where Do I Find the Job?

Jobseekers should apply directly to employers who hire Bakers and Food Batchmakers. Community colleges offer assistance in finding jobs to those taking classes or completing a certificate program.

Use the *Search for Employers by Industry* feature on the *Career Center* page at www.labormarketinfo.edd.ca.gov to locate employers in your area. Search under the following industry names to get a list of private firms and their addresses:

- ▶ All Other Miscellaneous Food
- ▶ Commercial Bakeries
- ▶ Convenience Stores
- ▶ Cookie and Cracker
- ▶ General Line Grocery Merchant Whsle
- ▶ Other Grocery Product Merchant Whsle
- ▶ Limited-Service Restaurants
- ▶ Retail Bakeries

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- ▶ Dry Pasta
- ▶ Fruit & Vegetable Merchant Wholesalers
- ▶ Full-Service Restaurants
- ▶ Snack and Nonalcoholic Beverage Bars
- ▶ Supermarkets and Other Grocery Stores

Search these **yellow page** headings for listings of private firms:

- ▶ Bakers, Retail
- ▶ Bakers, Wholesale
- ▶ Candy, Wholesale & Mfg.
- ▶ Cheese, Wholesale & Mfg.
- ▶ Grocers, Retail
- ▶ Grocers, Wholesale
- ▶ Hotels
- ▶ Ice Cream and Frozen Desserts
- ▶ Milk and Milk Products
- ▶ Restaurants
- ▶ Tortillas

Where Can the Job Lead?

Bakers who begin as new graduates of training programs, as apprentices, or trainees eventually learn the more complicated and artistic aspects of the craft, and, with time and expertise, earn higher wages. Some Bakers who show leadership qualities become supervisors or move to hotels or restaurants as Bread and Pastry Chefs, while a few leave to start their own bakery business.

Food Batchmakers with journey-level experience and interest can advance to shift supervisor.

Other Sources of Information

California Apprenticeship Coordinators Association, Culinary Program
www.calapprenticeship.org

Retail Bakers of America
www.rbanet.com

AIB International
www.aibonline.org

